

Amended Claims

1. (currently amended) A variable angular distribution lamp with a light output that is selectively variable in at least one of intensity, spectral composition, and spatial distribution, said lamp comprising:

a substrate;

a first lighting unit comprising:

 a first light emitting diode (LED) arranged on the substrate, and

 a first lens element having a first optical prescription, said first lens element being arranged to interact with light produced by the first LED to produce a first lamp illumination having a first angular distribution;

a second lighting unit comprising:

 a second light emitting diode (LED) arranged on the substrate, and

 a second lens element having a second optical prescription different from the first optical prescription, said second lens element being arranged to interact with light produced by the second LED to produce a second lamp illumination having a second angular distribution that is different from the first angular distribution; and,

 a controller for selectively supplying LED energizing power to the first and second lighting units independently of one another to thereby control at least one of the intensity, spectral composition, and spatial distribution of the light output from the lamp energizing a selected one of the first lighting unit and the second lighting unit to produce a lamp illumination having a selected one of the first angular distribution and the second angular distribution, the controller including a first switch selectively operated to energize the first lighting unit and a second switch selectively operated to energize the second lighting unit.

2. (previously canceled)

3-4. (currently canceled)

5. (previously amended) The lamp as set forth in claim 1, wherein:
light emitted from the first LED has a first spectral composition; and

light emitted from the second LED has a second spectral composition different from the first spectral composition.

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6. (previously amended) The lamp as set forth in claim 1, wherein:
at least one of the first and second lens elements has a tinted region that alters a spectral composition of light emitted from the lighting unit including the tinted region.

7-17. (currently canceled)

18. (new) A variable beam spot light including:
a substrate;
a first set of light emitting diodes disposed over the substrate;
a first set of lenses optically coupled to the first set of light emitting diodes, the lenses of the first set of lenses having a radius and refractive index that effects a first angular distribution of light produced by the first set of light emitting diodes;
a second set of light emitting diodes disposed over the substrate;
a second set of lenses optically coupled to the second set of light emitting diodes, the lenses of the second set of lenses having a radius and refractive index that effects a second angular distribution of light produced by the second set of light emitting diodes, the second angular distribution being different from the first angular distribution; and
a control module that energizes a selected one of the first set of light emitting diodes and the second set of light emitting diodes to produce a spot light beam with a corresponding selected one of the first angular distribution and the second angular distribution.

19. (new) The variable beam spot light as set forth in claim 18, wherein:
the first set of light emitting diodes is distributed substantially uniformly across the substrate; and
the second set of light emitting diodes is distributed substantially uniformly across the substrate, the light emitting diodes of the second set being interspersed amongst the light emitting diodes of the first set.

20. (new) The variable beam spot light as set forth in claim 18, wherein the second set of light emitting diodes surrounds the first set of light emitting diodes on the substrate.

21. (new) The variable beam spot light as set forth in claim 18, wherein the control module includes:

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a power input control that applies variable power energizing of the selected one of the first set of light emitting diodes and the second set of light emitting diodes to effect a variable intensity of the spot light beam.

22. (new) The variable beam spot light as set forth in claim 21, wherein the power input control of the control module is one of a user-operable rheostat and a variable voltage divider.

23. (new) The variable beam spot light as set forth in claim 18, wherein the control module includes:

a voltage divider that conditions voltage applied to one of the first set of light emitting diodes and the second set of light emitting diodes.

24. (new) A spot light with a variable width beam, the spot light including:
a substrate;

at least three sets of light emitting diode devices disposed on the substrate, the light emitting diode devices of each set surrounding a center of the substrate, each set of light emitting diode devices producing light having a selected angular light distribution, the angular light distributions of the at least three sets of light emitting diode devices spanning a range of angular light distributions; and

a control module that selectively energizes the sets of light emitting diode devices to produce a light with selectable angular light distribution over the range of angular light distributions.

25. (new) The spot light as set forth in claim 24, wherein each light emitting diode device includes:

a light emitting diode; and

a lens coupled to the light emitting diode.

26. (new) The spot light as set forth in claim 25, wherein the substrate is a copper plate having a plurality of wells formed therein, each well containing one of the light emitting diodes and having the coupled lens disposed over the contained light emitting diode.

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27. (new) The spot light as set forth in claim 24, wherein the light emitting diode devices of each set of light emitting diode devices are distributed essentially uniformly across the substrate.

28. (new) The spot light as set forth in claim 24, wherein the light emitting diode devices of the at least three sets of light emitting diode devices are arranged in concentric circles about the center of the substrate.

29. (new) The spot light as set forth in claim 28, further including:
a fourth set of light emitting diode devices consisting of a single light emitting diode device disposed at the center of the substrate.
